Visitor Guide

National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Joshua Tree Guide

A planning guide for visitors to Joshua Tree National Park

Spring, 2006

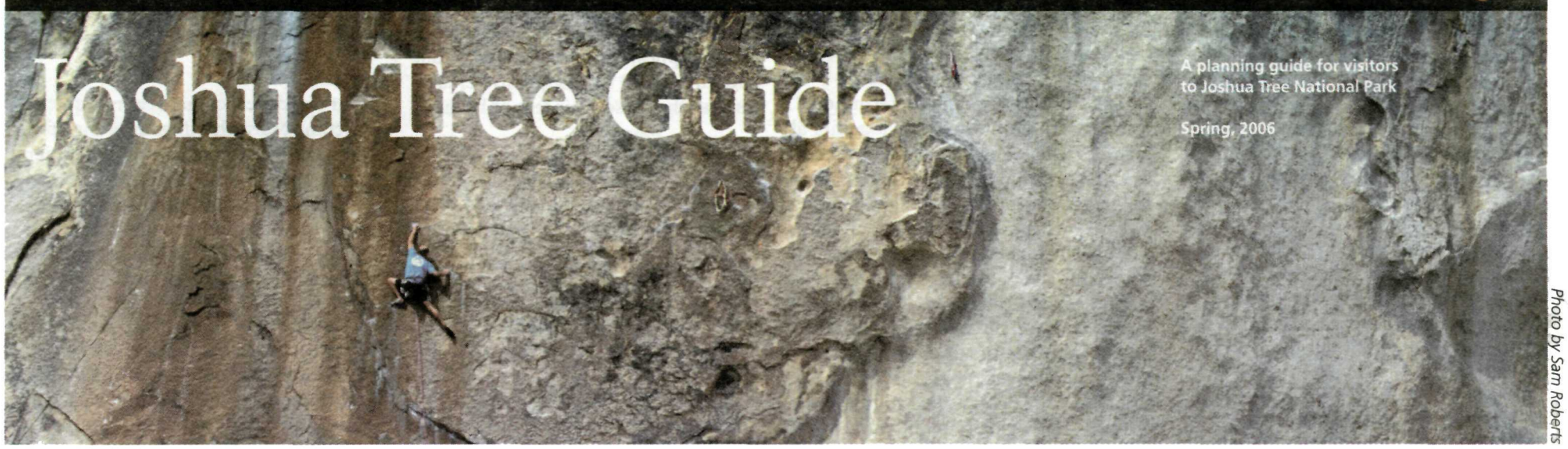


Photo by Sam Roberts

Planning Your Spring Visit

Beginning March 1, the park entrance fee will increase from $10 to $15 per vehicle. It will still be good for seven days. The cost of a Joshua Tree annual pass will also increase by $5 on March 1, to $30.

If you are coming to Joshua Tree to rock climb or boulder this spring, be sure to request a copy of the park's new rock climbing and bouldering guide. The brochures are available at fee stations and visitor centers.

Spring usually brings warming temperatures during the day, but nights remain quite cool. If the wind picks up, and it often does in spring, most park visitors will want a jacket. Regardless of the temperature, a hat, sunglasses, and sun screen applied liberally are a must—this is the desert after all.

The spring wildflower season usually begins with the large, cream-colored blooms of the Joshua trees in late February, followed by colorful annuals at the lower elevations around the south boundary of the park. Sometime in March, the bloom will follow rising temperatures into the higher elevations of the park. Cacti usually wait until April and May to produce their blooms.

Spring of 2005 was a spectacular wildflower year with a large variety of species in great profusion throughout the park. This large bloom occurred as a result of abundant fall and winter precipitation and a prolonged period of moderately warm weather. We have had far less rain leading up to this wildflower season, so we will have to wait awhile before we know what will bloom where and when. To get the latest information, stop by a visitor center or check the park's website at www.nps.gov/jotr.

The 14th Annual Joshua Tree National Park Art Festival will take place on the Oasis Visitor Center patio April 7 through April 9 this year.

Warmer spring temperatures mean that cold-blooded reptiles like lizards, snakes, and tortoises will be emerging from their winter burrows to bask in the sun. Each year a large number are run over on park roads, which tend to be warm places to hang out. Please drive slowly with a watchful eye.

Spring is an excellent season for birding in Joshua Tree. In addition to year-round residents, spring brings an influx of transients and summer nesting species. A birding check-list is available at visitor centers.

Great horned owl mother and chick
photo by Lorna Lange-Daggs

JOSHUA TREE NATIONAL PARK
74485 NATIONAL PARK DRIVE
TWENTYNINE PALMS, CA 92277

In This Issue

Visitor Center Hours

Oasis	8 a.m. – 5 p.m.
Cottonwood	9 a.m. – 3 p.m.
Black Rock	October - May
Daily (except Fridays)	8 a.m. – 4 p.m.
Fridays	Noon – 8 p.m.

Emergencies

Call 909-383-5651 or dial 911 or contact a park ranger.

Important information

accessibility
The nature trails at Bajada, Cap Rock, and the Oasis of Mara are accessible. Assisted listening systems and sign-language interpreters are available for some programs with prior notice.

all terrain vehicles
ATVs may not be used in the park.

bicycling
Bicycling is permitted on public roads, both paved and dirt. There are no bicycle paths and many roads are narrow, so ride cautiously. Bikes are prohibited on backcountry and nature trails.

campfires
Campfires are permitted in campgrounds and in picnic areas where fire grates are provided. Campfires are not allowed in the backcountry. Collecting vegetation, living or dead, is prohibited, so bring firewood.

climate
Days are typically clear with less than 25 percent humidity. Temperatures are most comfortable in the spring and fall, with an average high/low of 85°F and 50°F respectively. Winter brings cooler days, around 60°F, and freezing nights. It occasionally snows at higher elevations. Summers are hot, over—sometimes well over—100°F during the day and not cooling much below 75°F until the early hours of the morning.

commercial filming
When filming or photography involves advertising a product or service, the use of models, sets, props, or the use of a restricted site, a film permit is required.

day-use and restricted areas
Some areas within the park are privately owned; others protect wildlife or historical sites. Entering these areas is prohibited. Day-use areas are set aside to protect sensitive populations of wildlife. They are closed from dusk to dawn.

dehydration
It is easy to become dehydrated in arid desert environments. Even if you only plan to drive through the park, you should have some water with you. If you are going to camp, we recommend one gallon of water per person per day. If you are going to be hiking or biking, you will want to take along two gallons per person. Drink the water and do not economize. When the water is half gone, it is time to turn back.

emergency phones
In an emergency call San Bernardino Dispatch at 909-383-5651. Call collect. A pay phone is located at the visitor center in Twentynine Palms. You can find pay phones in the towns of Yucca Valley and Joshua Tree and at Chiriaco Summit (12 miles southeast of Cottonwood). Emergency-only phones are located at the ranger station in Indian Cove and at Intersection Rock parking area.

environment
Two deserts, two large ecosystems whose characteristics are determined primarily by elevation, come together at Joshua Tree National Park. Below 3,000 feet, the Colorado Desert encompasses the eastern part of the park and features natural gardens of ocotillo and cholla cactus. The higher, moister, and slightly cooler Mojave Desert is the special habitat of the Joshua tree. Joshua tree forests occur in the western half of the park, which also includes some of the most interesting geologic displays found in California's deserts. In addition, five fan palm oases dot the park, indicating those few areas where water occurs naturally and where wildlife abounds.

entrance fees
Admission to the park is $10 per vehicle ($15 beginning March 1) and is good for seven consecutive days. A Joshua Tree Pass may be purchased for $25 ($30 beginning March 1) and a National Parks Pass, which is good for all National Park Service sites, costs $50. Both are good for 12 months. A Golden Age Pass may be purchased by any U.S. citizen 62 or older for $10, and it is good for life.

firearms and weapons
Firearms, including fireworks, traps, bows, BB guns, paint-ball guns, and slingshots are not allowed in the park.

food, lodging, services
There are no concessions within the park. However, surrounding communities can fulfill most visitor needs. Contact local chambers of commerce for information. Their telephone numbers and web addresses are listed on page six of this publication.

food storage
Store food in hard-sided containers or in your vehicle to prevent ravens, coyotes, and other wildlife from eating it.

getting to the park
The park is located about 140 miles east of Los Angeles via I-10. Entrances to the park are located off CA HWY 62 (Twentynine Palms Highway), at the towns of Joshua Tree and Twentynine Palms. A third entrance is located about 25 miles east of Indio off I-10.

horses
Horseback riding is a popular way to experience the park. Because of the special requirements for stock in desert areas, you will want to request the publication on horse use before you come.

international visitors
Park information is available at visitor centers and entrance stations in Dutch, French, German, Italian, Japanese, and Spanish.

keep wildlife wild
Feeding coyotes, squirrels, and other animals weans them from their natural food supplies, causes overpopulation, and turns them into aggressive creatures as they lose their fear of humans.

leave no trace
During your visit please pick up trash around campgrounds and trails. Your actions will inspire other park visitors.

lost & found
Report lost, and turn in found, items at any visitor center or ranger station. Lost articles will be returned if found.

off-road driving
Vehicles, including bicycles, are prohibited off established roads. The desert ecosystem is fragile. Off-road driving and riding creates ruts, upsets delicate drainage patterns, compacts the soil, and leaves visual scars for years. Plants are crushed and uprooted. Wildlife shelters are destroyed, and food and water supplies are altered or obliterated.

parking
Park roads, even the paved roads, are narrow, winding, and have soft, sandy shoulders. Accidents occur when visitors stop along the road to admire a view or make a picture. There are many pullouts and parking lots, so wait until you get to one before stopping.

pets
While pets are allowed in the park, their activities are restricted. They must be on a leash at all times and cannot be more than 100 feet from a road, picnic area, or campground; they are prohibited from trails, and they must never be left unattended—not even in a vehicle.

potable water
Water is available at the visitor center in Twentynine Palms, at Black Rock and Cottonwood campgrounds, at the entrance station south of Joshua Tree, and at the Indian Cove ranger station.

rock climbing
Climbers may replace existing unsafe bolts, and new bolts may be placed in non-wilderness areas using the bolting checklist. Bolting in wilderness requires a permit. Bolting checklists and permit applications are available at entrance stations and visitor centers.

stay out and stay alive
Mining was an important activity in this area and numerous mining sites can be found within the park. If you choose to visit them, use extreme caution and do not enter old mine workings.

take only pictures
Over 1.25 million people visit Joshua Tree National Park each year. If each visitor took only one rock or one branch from a bush, the park, our national heritage, would soon be gone. Removal, disturbance, destruction, or disfigurement of anything in the park is unlawful.

trash
Our dry desert climate cannot quickly decompose such things as orange peels, apple cores, egg shells, and other picnic remains. Loose paper blows into bushes creating an unsightly mess, and plastic six-pack rings can strangle wildlife. Dispose of your trash in a responsible manner and recycle whatever you can.

vehicle laws
Park roads are narrow and winding. Some areas are congested. Speed limits are there for your safety and well-being. State and federal vehicle laws apply within the park.

visitor activities
Ranger-led programs are offered on the weekends from mid-October through mid-December and from mid-February through May. Check at visitor centers, at entrance stations, and on campground bulletin boards for a current schedule.

visitor centers
The park's main visitor center is located at the Oasis of Mara in Twentynine Palms. It is open 8 a.m. to 5 p.m. The Cottonwood Visitor Center is open from 8 a.m. to 4 p.m. Books, videos, maps, and related items are available, as well as cultural and natural history exhibits, and park rangers to answer your questions.

wildflowers
Spring blooming periods vary with elevation, temperature, and the amount of moisture in the soil. You can get current information by calling the park.

wildlife viewing
It is a thrill to see wild animals in the park, but remember: this is their home and they should not be disturbed. This includes the use of artificial light for viewing them.

world wide web
If you are "connected," check out the National Park Service publications on the web at www.nps.gov. We are adding more information all the time. For information about other desert attractions in California, surf over to www.californiadesert.gov.

you are responsible
You are responsible for knowing and obeying park rules. Check at visitor centers, at entrance stations, and on bulletin boards to find out what they are. When in doubt, ask a ranger.

Creosote Bush


a creosote bush in bloom

One doesn't have to look far to see a wonder of the plant world in Joshua Tree National Park. Known scientifically as *Larrea tridentata,* and in common parlance as the creosote bush, it produces small, pretty yellow flowers in spring and summer. But it is the pleasantly pungent smell, which the leaves produce as soon as a summer rain starts, that is most noticeable.

The creosote bush is the signature plant of the southern part of the park and a common, characteristic, and often dominant shrub of the deserts of southwestern North America. Its closest relative lives in the arid regions of Argentina.

Actually, what botanists classify as a single species in the North American deserts is now known to consist of three genetically different shrubs. Creosote bushes of the Mojave Desert have 78 chromosomes, those of the Sonoran Desert (southern Arizona) have 52 chromosomes, while those of west Texas (Chihuahuan Desert) have only 26. Such an increase in the number of chromosomes in plant evolution is not that unusual. Seedless watermelons, for example, were the result of doubling the number of chromosomes of regular watermelons, the lack of seeds being a side effect. In the case of the Mojave creosote, the increase in chromosome number may have been accompanied by an increasing ability to survive on the less summer rainfall in the Mojave.

The genetic and fossil evidence indicate that the Mojave creosote is a relative newcomer to our part of California. Eleven to 12,000 years ago, at the end of the Ice Age, this area would have been dominated by juniper woodland and lots of grass. As the climate became warmer and drier the junipers retreated to the nearby mountains, and a new plant, evolved from the Sonoran Desert form, appeared on the scene: our creosote bush. The newcomer was so successful in the competition for scarce water that it soon became the largest and most conspicuous plant of our desert landscape.

Although creosote bushes produce large numbers of fuzzy seeds at each flowering, few of them are able to germinate. It takes decades for creosote bushes to return to areas that have been cleared of native shrubs. Even a one-foot high plant is probably at least ten years old. As the shrub grows, branches continue to originate around the periphery of the original stem crown. The branches grow upward for about six feet giving the whole shrub the rounded shape of an upside down cone.

As growth continues, the oldest branches gradually die and the stem crown splits into separate crowns. This happens at an age of 30 to 90 years. Eventually, the original stem and early branches die and rot away; the connections between adjoining segments of the stem crown thus disappear. The plant has now become a clone, composed of several independent stem crowns all descended from one seedling. The process continues until the clone spreads across the ground in a circular or elliptical shape. As you travel in the park, see if you can find one or more of these circular creosote clones. Usually, a mound of sand accumulates in the central area.

In a few areas of the Mojave Desert clonal creosote rings have been found that are several yards in diameter. Near Lucerne Valley, "King Clone" has an average diameter of 45 feet! Using radiocarbon dating and known growth rates of creosote, scientists have estimated the age of "King Clone" as 11,700 years. Some of these common residents have been here continuously since the last ice age. They are certainly an integral part of our desert environment and many desert animals depend on the creosote for food and shelter.

The Indians of the Southwest appreciated the creosote bush. The leaves were an important part of their pharmacopoeia. The Apaches prescribed chewing and swallowing a small piece of creosote branch to cure diarrhea. Other tribes made a strong tea from the dried leaves to treat the common cold. The resinous leaf nodes were used to soothe bruises and wounds. And a tea made from the leaves and sweetened with a little honey was said to greatly relieve kidney pain.

Modern herbalists also have found uses for the ancient creosote. An extract is now marketed as a cure for herpes. Another extract is being investigated as an anti-cancer drug. However, large doses of creosote have been shown to cause liver damage.

by Dr. Harold De Lisle, herpetologist

OUR VANISHING NIGHT SKIES

"In the beginning, there were no stars in the sky." So begins many a tale from cultures around the world. Stories that tell how stars and constellations came to be are among the oldest of all folktales, but they have as much relevance and resonance for people today as when they were first told. How many of you have stood beneath a star-spangled night sky and felt a connection to stargazers throughout the centuries? One of the earliest identified constellations is Ursa Major, or Great Bear, called the Big Dipper by Americans, the Plough by the British, and by many other names around the world—but no matter what it is called, it remains a timeless link between people—ancient and modern—everywhere on Earth.

The rotation of the Earth on its axis every 24 hours gives the impression that the Big Dipper is turning around the Little Dipper; as Earth revolves around the sun in the course of a year, whole constellations seem to come and go. Stars were the calendar and clock for ancient peoples. As stars disappeared and reappeared, people would mark the seasons, calculating when to sow the fields, when to reap, when to celebrate. Stars and constellations have also been used as navigational aids for thousands of years: ancient Polynesian myths tell how their people, paddling dugout canoes across the vast Pacific Ocean, were able to discover such islands as Hawaii by the position of certain stars. We no longer need the stars to tell us when to plant and harvest, and we have complex navigational aids that can even get us to the moon. But certainly something would be missing from our lives if we could no longer look up and wish upon a shooting star or think of Grizzly, shaking off snow as he lumbered across the sky, creating the glittering path we call the Milky Way. For city dwellers, however, most of the wonders of the night sky are already missing, due to air and light pollution. It is estimated that only around 10 percent of the population of the United States is able to see the night sky in its natural, unpolluted state. No wonder visitors to remote parks are awed and astounded when they get their first glimpse of the night sky.

Excessive or misdirected outdoor lighting is most often the cause of light pollution. This light glare is made worse by smog and haze associated with air pollution. Light pollution not only hinders stargazing, but can also have other far-reaching effects. Lighting along coastal areas can confuse newly hatched sea turtles, leading them away from the ocean's faint sheen and towards the artificial light. Scientists have found that bright lights on tall buildings can confuse migratory birds. And even plants can be affected—deciduous trees near streetlights often have their life cycle disrupted and lose their leaves later than normal in the year.

Under ideal conditions, a viewer might see over 2,500 stars in the night sky and the arc of the Milky Way from horizon to horizon. But these ideal conditions are becoming harder and harder to find. We can understand that city lights will blot out all but the brightest stars. But who would guess that even a thinly populated suburb may have light pollution that could block out as many as half the stars and the delicate details of the Milky Way? And many national parks are also being affected by the excessive glare from neighboring gateway communities.

Joshua Tree was one of the national parks chosen by the Night Sky Team to measure the effects of light pollution on the night sky. The team visited six locations within Joshua Tree National Park, charting the effect of nearby cities upon the total sky glow. Even in the middle of the Pinto Basin, the effect of neighboring cities was apparent, with the stars gradually fading towards the western horizon where the sky was washed out in an arc from Twentynine Palms in the northwest to the Coachella Valley in the southwest.

What's being done to address the impacts of light pollution at Joshua Tree National Park? Local astronomers and park staff have worked to raise awareness in the local towns bordering the park to the north. Lighting ordinances either are in place or are being discussed in these towns. The Town of Yucca Valley hosts the annual Starry Nights Festival that draws many visitors—good both for business and the night skies. Working with the growing communities to the south is especially important. On an individual level, people can help reduce light pollution in their own areas by using night lighting only when necessary, and choosing energy-efficient lights and well-shielded fixtures, and convincing their communities to do the same. Otherwise, children could begin thinking that the Milky Way is only a candy bar, and future stories might begin, "Once upon a time, there were stars in the sky."

by Retired Park Ranger Elize Van Zandt

Campgrounds

Emergency: dial 909-383-5651

Campgrounds	Elevation	Sites	Fee	Group Sites	Group Fee	Horse Camp	Water	Flush Toilets	Chemical Toilets	Tables	Fire Grates	Dump Station
Belle	3800′	18	$5						*	*	*	
Black Rock	4000′	100	$10			$10	*	*		*	*	*
Cottonwood	3000′	62	$10	3	$25		*	*		*	*	*
Hidden Valley	4200′	45	$5						*	*	*	
Indian Cove	3200′	101	$10	13	$20/35				*	*	*	
Jumbo Rocks	4400′	125	$5						*	*	*	
Ryan	4300′	31	$5			$5			*	*	*	
Sheep Pass	4500′			6	$20/35				*	*	*	
White Tank	3800′	15	$5						*	*	*	

Campsites are limited to six people, three tents, and two cars. Group sites accommodate ten to 60 people.

Obtain reservations for sites at Black Rock, Indian Cove, and all group sites by calling 1-800-365-2267. Other campgrounds are first-come, first-served. Camp only in designated campsites.

There are no hookups for recreational vehicles. At Hidden Valley and group sites, recreational vehicles may not exceed 25 feet in length. At White Tank, the 25-foot limit includes the towing vehicle.

Water is available at Oasis Visitor Center, Indian Cove Ranger Station, West Entrance, and Black Rock and Cottonwood campgrounds. Showers are not available.

Store food in containers capable of preventing access by wildlife or in your vehicle. Any scented or odorous items must be similarly stored.

All vegetation in the park is protected. If you want to make a campfire, bring your own firewood.

Quiet hours are from 10 p.m. to 6 a.m. Generator use is limited to six hours a day: 7 to 9 a.m., noon to 2 p.m., and 5 to 7 p.m.

There is a 30-day camping limit each year. However, only 14 nights total may occur from October through May.

Be an inspiration to others; leave your campsite cleaner than you found it.

What To See And Do

Viewed from the road the desert may appear bleak and drab. Closer examination reveals a fascinating variety of plants and animals and surreal geologic features. Joshua Tree National Park offers visitors endless opportunities for exploration and discovery. Depending on the number of hours you have to spend, your interests and energy, here are some ideas to consider:

IF YOU HAVE FOUR HOURS OR LESS, begin your tour at a park visitor center. Park staff will be happy to provide you with current information about conditions in the park as well as answers to your questions.

With limited time you may want to confine your sightseeing to the main park roads. Many pullouts with wayside exhibits dot these roads. A list of nature trails and short walks appears in this publication. Consider experiencing at least one of these walks during a short park visit.

On clear days the vista from Keys View extends beyond Salton Sea to Mexico and is well worth the additional 20-minute drive.

IF YOU PLAN TO SPEND AN ENTIRE DAY, there will be time to walk several nature trails or take a longer hike; several are listed on page 7 of this publication. A ranger-led program will add enjoyment and understanding to your visit. Check at visitor centers and on campground bulletin boards for listings. Or, call ahead and reserve a spot on the popular Keys Ranch guided walking tour.

Some visitors like to experience the desert from the seat of a mountain bike. The park offers an extensive network of dirt roads that make for less crowded and safer cycling than the paved main roads. A selection of road trips is included in the article titled Backcountry Roads in this publication.

Joshua Tree has gained international attention as a superb rock-climbing area. Many visitors enjoy watching the rock climbers in action.

WITH MORE THAN ONE DAY IN THE PARK, your options increase. There are nine campgrounds and backcountry camping is permitted. You will find information concerning camping and backcountry use elsewhere in this publication.

Books and topographic maps give information needed for longer hikes. For "peak baggers," the park has ten mountains over 5,000 feet (1,524 m) in elevation. Or make it your goal to hike to all the park oases. Other trails lead you to remnants of the gold mining era, a colorful part of the park's cultural history.

Whatever you choose, your time will be rewarding. The desert holds much more than what is readily apparent to the casual observer. A NOTE OF CAUTION: The desert, fascinating as it is, can be life-threatening for those unfamiliar with its potential dangers. It is essential that you carry water with you—even if you are only driving through. Cars break down; keys get locked inside; accidents happen.

Backcountry Roads

for mountain bikes and 4-wheel drive vehicles

Mountain bikes and 4-wheel drive vehicles are welcome in the park. For your own safety and for the protection of natural features, stay on established roads. Tire tracks on the open desert can last for years and will spoil the wilderness experience of future hikers.

Paved roads in the park are narrow with soft shoulders. Curves, boulder piles, and Joshua trees restrict the vision of bikers and motorists. The unpaved roads in the park are safer for bikes and offer many opportunities to explore the area. Here is a sampling:

Pinkham Canyon Road

This challenging 20-mile (32.4-km) road begins at Cottonwood Visitor Center, travels along Smoke Tree Wash, and then cuts down Pinkham Canyon. Sections of the road run through soft sand and rocky flood plains. The road connects to a service road next to I-10.

Black Eagle Mine Road

Beginning 6.5 miles (10.5 km) north of Cottonwood Visitor Center, this dead-end dirt road runs along the edge of Pinto Basin, crosses several dry washes, and winds through canyons in the Eagle Mountains. The first nine miles (14.5 km) are within the park boundary. Beyond that point is Bureau of Land Management land and a number of side roads. Several old mines are located near these roads. Use extreme caution when exploring old mines.

Old Dale Road

This 23-mile (37.3 km) road starts at the same point as Black Eagle Mine Road. The first 11 miles (17.8 km), cross Pinto Basin, a flat, sandy dry lake bed. Leaving the basin, the road climbs a steep hill, then crosses the park boundary. A number of side roads veer off toward old mines and residences. The main road leads to CA HWY 62, 15 miles (24.3 km) east of Twentynine Palms.

Queen Valley Roads

A network of roads, totaling 13.4 miles (21.7 km), crosses this valley of boulder piles and Joshua trees. A bike trip can begin at Hidden Valley or the dirt road opposite Geology Tour Road. Bike racks have been placed in this area so visitors can lock their bikes and go hiking.

Geology Tour Road

An 18-mile motor tour leads through one of the park's most fascinating landscapes. The road turns south from the paved road two miles (3.2 km) west of Jumbo Rocks Campground. There are 16 stops and it takes approximately two hours to make the round trip. The distance from the junction to Squaw Tank is 5.4 miles (8.8 km) This section is mostly downhill but bumpy and sandy. Starting at Squaw Tank, a 6-mile (9.7 km) circular route explores Pleasant Valley. A descriptive brochure that highlights each stop is available at the beginning of the road.

Covington Flats

The dirt roads in Covington Flats offer access to some of the park's largest Joshua trees, junipers, and pinyon pines. From Covington Flats picnic area to Eureka Peak is 3.8 miles (6.2 km) one-way. The dirt road is steep near the end, but the top offers views of Palm Springs, the surrounding mountains, and the Morongo Basin. Your trip will be 6.5 miles (10.5 km) longer if you ride or drive over to the backcountry board, a starting point for excellent hiking.

Backcountry Camping, Hiking, and Horseback Riding

Joshua Tree National Park is a back-packer's dream with its mild winter climate and interesting rock formations, plants, and wildlife. It embraces 794,000 acres, of which 585,040 acres have been designated wilderness. By observing the guidelines below, your venture into the backcountry should be safe and enjoyable. If you have questions, ask a ranger. It is your responsibility to know and abide by park regulations.

Registering

If you will be out overnight, register at a backcountry board. The map in this publication indicates the location of the twelve backcountry boards. An unregistered vehicle or a vehicle left overnight somewhere other than at a backcountry board is a cause for concern about the safety of the vehicle's occupants. It is also subject to citation and towing.

Hiking

It is easy to get disoriented in the desert: washes and animal trails crisscross the terrain obscuring trails, boulder piles are confusingly similar, and there are not many prominent features by which to guide yourself. Do get yourself a topographic map and compass or GPS unit and learn how to use them before you head out. Cell phones are often not usable inside the park.

Know your limitations and don't take risks. You should not attempt to climb steep terrain without adequate equipment, conditioning, and training. Accidents can be fatal.

Carry a minimum of one gallon of water per person per day just for drinking, two gallons in hot weather or if you are planning a strenuous trip. You will need additional water for cooking and hygiene. And don't forget the other essentials: rain protection, a flashlight, a mirror and whistle, a first-aid kit, pencil and paper, a pocket knife, and extra food.

Locating your camp

Your wilderness camp must be located one mile from the road and 500 feet from any trail. Make yourself aware of any day-use areas in the vicinity (they are indicated on the maps at the backcountry boards) and make certain to camp outside their boundaries.

Washes may seem like inviting places to sleep because they are relatively level, but it is important to realize that they got that way because flash floods "bulldozed" the rocks and vegetation out of the way.

Domestic issues

Water sources in the park are not potable and are reserved for wildlife, so you will have to carry in an adequate supply for drinking, cooking, and hygiene. You will want to give some thought to the trade-off between the water required to hydrate dried foods and the heftier weight of canned and fresh foods. If you want to heat something you will need to pack in a stove and fuel as open fires are prohibited in the backcountry.

Bring plastic bags to hold your garbage and pack it out. Buried trash gets dug up by animals and scattered by the wind; it is not a pretty sight. Do bury human waste in "cat" holes six inches deep. Don't bury your toilet paper; put it in plastic (zip-locks work nicely) and pack it out. Leave no trace, as they say.

Coping with the weather

That old desert sun can damage eyes as well as skin. Wear a hat and sunglasses and use sun-blocking lotion liberally.

Temperature changes of 40 degrees within 24 hours are common. Bring a variety of clothes so you can layer on and off as conditions change.

Although rain is relatively rare in the desert, when it does come it can really pour down. Even when it isn't raining where you are, rain in the mountains can run off so fast as to cause flash floods. Stay alert.

Horseback riding

Horseback riding is a popular way to experience the backcountry and there are 253 miles of equestrian trails that traverse open lands, canyon bottoms, and dry washes. Because of the special requirements for horses, care should be taken in planning your trip. You may call 760-367-5500 and request that additional information be mailed to you.

National Park Service
U.S. Department of the Interior

Joshua Tree National Park

Designations
National Park – 1994
Biosphere Reserve – 1984
National Monument – 1936

Size
794,000 acres

Superintendent
Curt Sauer

Park Information
760-367-5500

Web Site
www.nps.gov/jotr/

Mailing Address
74485 National Park Drive
Twentynine Palms, CA 92277

E-mail
jotr_info@nps.gov

Fax Number
760-367-6392

The National Park Service cares for the special places saved by the American people so that all may experience our heritage.

Black Rock Canyon Offers Good Hiking and More

Located in the northwest corner of the park, the road to Black Rock Canyon dead-ends at the campground. Campsites are located on a hillside at the mouth of the canyon surrounded by Joshua trees, junipers, cholla cacti, and a variety of desert shrubs. Spring blooms usually begin with the Joshua trees in late February followed by shrubs and annuals through May.

This quiet, family campground is a good introduction for first-time campers. Each campsite has a picnic table and fire ring with rest rooms and water nearby. If you forget to bring your firewood, shopping facilities are only five miles away in the town of Yucca Valley. Campsites vary in size and can accommodate both tents and RVs. A day-use picnic area and a dump station are also available. For horse owners, a separate area is provided for camping or for staging a ride.

Campers register and pay camping fees at the nature center located in the middle of the campground. The staff at this small visitor center can help you plan a hike or other activity. Maps, books, nature guides, and children's activity books may be purchased there.

The hills behind the campground offer a variety of hiking trails including the Hi-View Nature Trail. The interpretive guide for this trail, available at the nature center, identifies the vegetation along this scenic 1.3-mile walk. For those looking for longer trails, Eureka Peak, Panorama Loop, and Warren Peak take hikers to ridge lines overlooking the often snowy peaks of San Jacinto and San Gorgonio. The trailhead for a 35-mile section of the California Riding and Hiking Trail is located at Black Rock. Backpackers can register at the backcountry board here for overnight wilderness trips.

But you don't have to hike to enjoy the Black Rock Canyon area. Wildlife sightings are frequent in the campground. Visitors often encounter ground squirrels, jackrabbits, and cottontails. Frequent bird sightings include cactus wrens, Gambel's quail, great horned owls, scrub-jays, and roadrunners. A lucky birder might be rewarded with a glimpse of a Scott's oriole, pinyon jay, or LeConte's thrasher. More elusive species such as bobcat, bighorn sheep, mountain lions, desert tortoises, and mule deer have all been seen in the area. As the sun sets, listen for the "singing" of coyotes living on the outskirts of the campground.

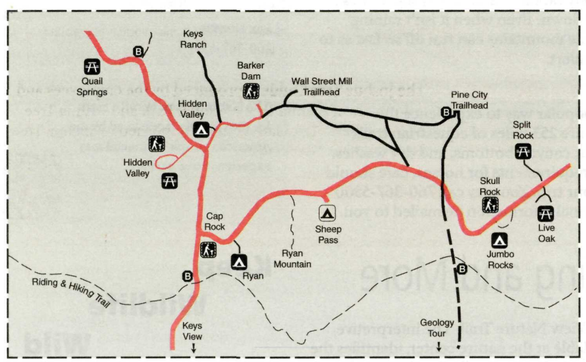
Please do not feed wild animals in Joshua Tree National Park. People food is unhealthy for them and they could become aggressive and harm you.

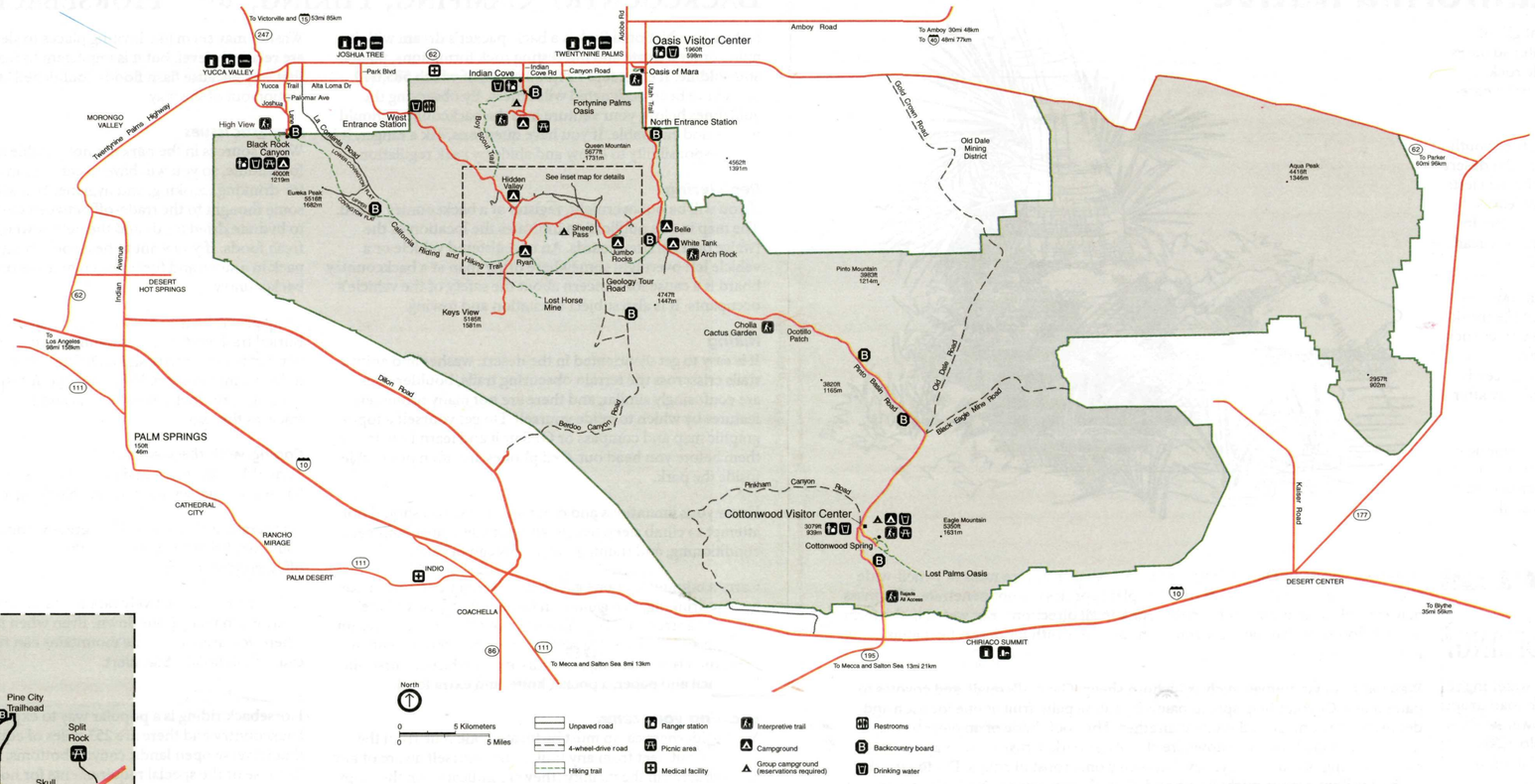
Keep Wildlife Wild

Don't feed coyotes! People food is not healthy for them. It makes them into beggars, and they might bite you. Also, it is against the law, and a ranger will give you a ticket, then you will have to pay a big fine!

by Junior Ranger Sarah

How Far Is It?	Oasis of Mara	Cottonwood Spring	West Entrance
Belle Campground	9	28	23
Black Rock Canyon	28	73	12
Cap Rock	19	40	11
Cholla Cactus Garden	18	20	31
Cottonwood Spring	38	0	46
Hidden Valley	20	42	9
Indian Cove	10	48	18
Interstate 10	45	7	35
Jumbo Rocks Campground	11	33	18
Keys Ranch Tour	22	44	11
Keys View	24	45	16
Oasis of Mara	0	38	29
Ryan Campground	18	39	11
Sheep Pass Campground	16	37	14
West Entrance	34	51	0
White Tank Campground	11	27	24





Area Information

For information about accommodations and attractions in surrounding communities, you may contact the following chambers of commerce:

Indio
82503 Hwy 111
Indio, CA 92201
760-347-0676
indiochmbr@aol.com
www.indiochamber.org

Joshua Tree
P.O. Box 600
Joshua Tree, CA 92252
760-366-3723
www.joshuatreechamber.org

Palm Springs
190 W. Amado Rd.
Palm Springs, CA 92262
760-325-1577
PSChamber@worldnet.att.net
www.pschamber.org

Twentynine Palms
6455 Mesquite Ave. Unit A
Twentynine Palms, CA 92277
760-367-3445
www.29chamber.com

Yucca Valley
56300 29 Palms Hwy.
Yucca Valley, CA 92284
760-365-6323
chamber@yuccavalley.org
www.yuccavalley.org

Emergency: dial 909-383-5651

NATURE TRAILS

Trail	Mileage	Starting Point
Arch Rock	.3-mile loop (.5-km)	White Tank Campground, opposite site 9
Bajada All-Access	.25-mile loop (.4-km)	South of Cottonwood, one-half mile from the southern entrance to the park
Barker Dam	1.1-mile loop (1.8-km)	Barker Dam parking area
Cap Rock	.4-mile loop (.6-km)	Cap Rock parking area, at the junction of Park Blvd. and Keys View Road
Cholla Cactus Garden	.25-mile loop (.4-km)	20 miles north of Cottonwood Visitor Center
Cottonwood Spring	1-mile (1.6-km)	Cottonwood Spring parking area
Hidden Valley	1-mile loop (1.6-km)	Hidden Valley picnic area
Hi-View	1.3-mile loop (2.1-km)	Northwest of Black Rock Campground
Indian Cove	.6-mile loop (1-km)	West end of Indian Cove Campground
Keys View	.25-mile loop (.4-km)	Keys View
Oasis of Mara	.5-mile loop (.8-km)	Oasis Visitor Center, Twentynine Palms
Skull Rock	.25-mile (.4-km)	Jumbo Rocks Campground

The Joshua Tree Guide is produced by the employees and volunteers of Joshua Tree National Park and Joshua Tree National Park Association and is published by Joshua Tree National Park Association.

HIKING TRAILS

Trail	Round-trip Mileage	Time	Starting Point	Trail Description
Boy Scout Trail	16 miles 25.8km	1-2 days	Indian Cove backcountry board or Keys West backcountry board 0.5 mile (0.8km) east of Quail Springs Picnic area	Scenic trail through the western most edge of the Wonderland of Rocks. See backcountry board for information on overnight use. Moderate.
49 Palms Oasis	3 miles (4.8 km)	2-3 hours	Parking area at end of Canyon Road, 4 miles (6.4 km) west of Twentynine Palms off Hwy 62	Several stands of fan palms, evidence of past fires, and pools of water are found at the oasis. The plants in this area are especially fragile, so walk lightly. Moderately strenuous.
Lost Horse Mine/Mt.	4 miles (6.4 km)	3-4 hour	Parking area 1.2 miles (1.9 km) east of Keys View Road	Site of ten-stamp mill and foundations. Summit elevation: 5278 feet (1609 m). Moderately strenuous.
Lost Palms Oasis	7.5 miles (11.2 km)	4-6 hours	Cottonwood Spring or Cottonwood Campground	A canyon with numerous palm stands. A side trip to Victory Palms and Munsen Canyon involves boulder scrambling. Moderate to oasis overlook, then strenuous.
Mastodon Peak	3 miles (4.8 km)	2-3 hours	Cottonwood Spring or Cottonwood Campground	Excellent views of the Eagle Mountains and Salton Sea. Summit elevation: 3371 feet (1027 m). Moderate.
Ryan Mountain	3 miles (4.8 km)	2-3 hours	Ryan Mountain parking area or Sheep Pass Campground	Excellent views of Lost Horse, Queen, and Pleasant Valleys. Summit elevation: 5461 feet (1664 m). Moderately strenuous.

Thirty-five miles of the California Riding and Hiking Trail pass through the park. Access to the trail is at its junction with Covington Flats, Keys View, and Squaw Tank (Geology Tour) Roads; at Ryan Campground; south of Belle Campground; and near the north entrance to the park. This allows for shorter hikes of 4, 6.7, or 11 miles (6.4, 10.7, or 17.6 km). Two to three days are required to hike the entire length of the trail.

The Desert Fan Palm: A California Native

In an otherwise hot and sparse environment, palm oases are a luxuriant gift of shade and solace. The verdant display requires a constant supply of water so oases often occur along fault lines, where uplifted layers of hard impermeable rock forces underground water to the surface. There are only 158 desert fan palm oases in North America. Five are located in Joshua Tree National Park.

The desert fan palm, *Washingtonia filifera,* is native to the low hot deserts of Southern California where it can live for 80 to 90 years. Towering up to 75 feet, the desert fan palm is among the tallest of North American palms. It is definitely the heaviest: a mature desert fan palm can weigh as much as three tons. Its distinctive leaves are shaped like a fan and folded like an accordion. They measure up to six feet in length and are nearly as wide. Looking much like "petticoats," the fan palm's dead leaves remain attached to its trunk until removed by fire, wind, or flood.

Fire is beneficial for palms and rarely kills an adult. In palms the vascular bundles, those tubes that transport water and nutrients, are scattered throughout the trunk. This arrangement provides insulation from the heat of a fire. In contrast, trees such as oaks have all their vascular tissue in a ring just beneath the bark. Fire does kill young palms, but it also removes competitors and opens up space for palm seeds to germinate. In fact, desert fan palms increase seed production immediately after fires. A healthy palm can produce as many as 350,000 seeds.

People have been attracted to palm oases since prehistoric times. Native Americans ate the palm fruit and used the fronds to build waterproof dwellings. The Cahuillas (pronounced: Ka-wee-yahs) periodically set fire to oases in order to increase fruit production and to remove the sharp-edged palm fronds littering the oasis floor. The Cahuillas also planted palm seeds in promising locations.

Water is a necessity. Desert fan palms suck up water using a mass of pencil-wide rootlets so dense that the roots of other plant species cannot penetrate. This mass may extend as far as 20 feet from the trunk in all directions. But water, in the form of flash floods, is also the most common cause of death for desert fan palms living in narrow canyons.

Water also draws animals such as bighorn sheep, Gambel's quail, and coyotes to palm oases. Coyotes help spread palms by eating palm fruit at one location and depositing the undigested seeds at another. The cool shade of an oasis provides habitat for animals that live nowhere else. After dark, a rush of air may be caused by the passing of a western yellow bat—they only roost in palms. During the day, a flash of yellow-orange might be a hooded oriole preparing to build its woven sack-like nest under the large green leaves of a desert fan palm. The dime-sized holes seen in the trunks of palms are exit holes of the two-inch, blue-black, giant palm-boring beetle, *Dinapate wrightii,* who lives exclusively in palm oases.

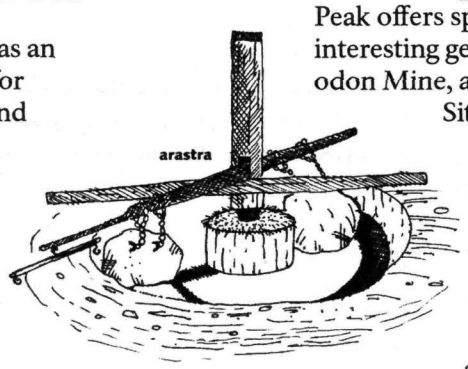
The larvae of the Dinapate beetle spend about five years chewing tunnels within the trunks of desert fan palms. The chewing is so loud that woodpeckers use the noise to locate the larvae. Successful larva pupate within the trunk then chew their way out. Because their rear end is wider than their front end, they exit going backwards to avoid getting stuck. Emerging in June, males and females mate and then die within a few weeks. Eventually these beetles can kill a palm, but they only inhabit older trees. Giant palm-boring beetles keep the palm population young and vibrant. The presence of these beetles is actually a sign of a healthy oasis.

Palms stand straight and tall, looking proud and invincible. But they aren't. Any place can be overly loved. As you explore these oases of wonder, take care. Use existing paths. Watch out for young palms—seedlings look like thick blades of grass. We do not want the presence of people to be a sign of a declining oasis.

Where in the Park is Cottonwood Spring?

Cottonwood Spring Oasis, one of the best kept secrets in Joshua Tree National Park, is just seven miles from the southern entrance to the park. The spring, the result of earthquake activity, was used for centuries by the Cahuilla Indians, who left bedrock mortars and clay pots, or ollas, in the area.

Cottonwood Spring was an important water stop for prospectors, miners, and teamsters traveling from Mecca to mines in the north. Water was necessary for gold processing, so a number of gold mills were located here. The remains of an arrastra, a primitive type of gold mill, can be found near the spring, and concrete ruins mark the sites of two later gold mills in the area.



Cottonwood Spring was first mentioned in a gold mine claim filed in 1875, indicating that the trees are native. Fan palms first appear around 1920, perhaps growing from seeds deposited by a bird or coyote.

A number of hikes begin at Cottonwood Spring. A short, easy walk down Cottonwood Wash leads past a second oasis to a dry falls. In wet years, the falls can become a scene of rushing water and red-spotted toads. Bighorn sheep often come up the wash for water in the early hours. An old teamster road drops down past the falls to the lower wash. A short hike leads through palo verde and desert willow trees to the remains of Moorten's Mill.

The three-mile loop trail to Mastodon Peak offers spectacular views, interesting geology, the Mastodon Mine, and the Winona Mill Site. And, for those looking for a longer hike—eight miles round trip—and the largest stand of fan palms in the park, the Lost Palms Oasis trail is a sure winner.

But you don't have to hike to enjoy Cottonwood Spring. This is one of the best birding spots in the park, so bring your binoculars and sit a spell.

The campground, which has water and rest rooms, is located one-half mile from Cottonwood Spring via a signed trail; there are also shaded picnic tables in the campground. To learn more about the plants, animals, and history of this fascinating place, join a ranger-led hike, walk, or campfire program, offered most weekends.

Think Globally, Act Locally

Bring your aluminum and metal cans, glass, and plastic to a campground recycling center.

Share or recycle this Joshua Tree Guide when you have finished reading it.

Participate in recycling in your community.

CAMPGROUND ASTRONOMY

Camping away from city lights gives many of us city dwellers a chance to see the sky as we have never seen it. A great way to introduce someone to the "dark sky" is to tour the Milky Way with binoculars. First just lie back on the ground and gaze at the band of light. Notice how it is brighter in places, with clumps of light and dark streaks where stars seem to be absent. Realize that the glow of light is from stars so far away that we can't quite make them out. The dark lanes are actually interstellar dust that blocks our view. The clumps of light are clouds of stars.

Find one of those star clouds and, without taking your gaze away from it, raise your binoculars to your eyes. The cloud will resolve into hundreds of stars, with perhaps smaller clumps and hazy patches in the field of view.

Notice how the Milky Way seems to be very bright and dense to the south near the horizon? You are looking toward the center of our galaxy, where the stars are richest. The constellations Sagittarius and Scorpio lie in this direction.

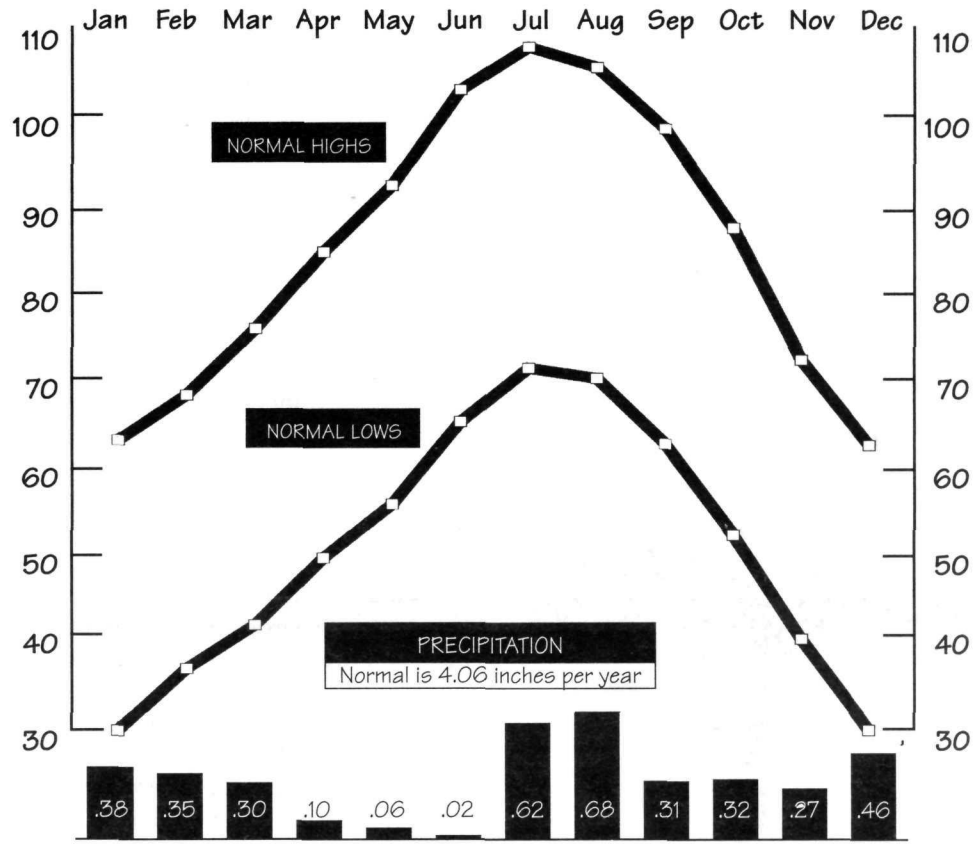
Just west of Sagittarius is Scorpio, one of the few constellations that looks like its name. Scorpio is distinguished by the bright red star Antares, located in the scorpion's neck. Look at Antares with binoculars. See the large fuzzy ball of light next to it? That is a large globular cluster.

Turn your attention northward, above and to the left of the stars of Sagittarius. You will see a large cloud of stars. This is the Scutum star cloud. With binoculars you should easily see a hazy patch of light. This is a beautiful open star cluster.

As we move farther north, higher in the sky, we see the star clouds in the constellation Cygnus, the swan. This constellation also looks like its name. We can see the neck pointing south, and the wings stretched east and west. The bright star behind the wings is Deneb, the "tail" of Cygnus.

To help identify the many objects you will find with binoculars, you will want a star chart. A circular "star finder," also known as a "planisphere," will show the location of many celestial objects.

The Weather



Measurements were taken at 1,960 feet. You can expect seven to 12 degrees cooler temperatures and 3.5 inches more precipitation at higher elevations.

Rockpiles

The geologic landscape of Joshua Tree has long fascinated visitors to this desert. How did the rocks take on such fantastic shapes? What forces sculpted them?

Geologists believe the face of our modern landscape was born more than 100 million years ago. Molten liquid, heated by the continuous movement of Earth's crust, oozed upward and cooled while still below the surface of the overlying rock. These plutonic intrusions are a granitic rock called monzogranite.

The monzogranite developed a system of rectangular joints. One set, oriented roughly horizontally, resulted from the removal, by erosion, of the miles of overlying rock, called gneiss (pronounced "nice"). Another set of joints is oriented vertically, roughly paralleling the contact of the monzogranite with its surrounding rocks. The third set is also vertical, but cuts the second set at high angles. The resulting system of joints tended to develop rectangular blocks. (figure 1) Good examples of the joint system may be seen at Jumbo Rocks, Wonderland of Rocks, and Split Rock.

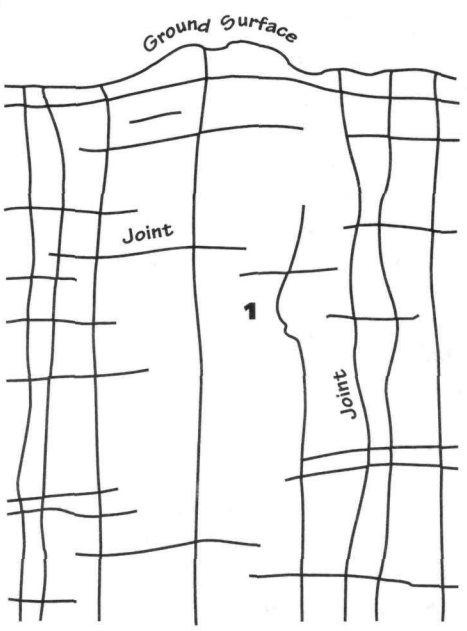
As ground water percolated down through the monzogranite's joint fractures, it began to transform some hard mineral grains along its path into soft clay, while it loosened and freed grains resistant to solution. Rectangular stones slowly weathered to spheres of hard rock surrounded by soft clay containing loose mineral grains. Imagine holding an ice cube under the faucet. The cube rounds away at the corners first, because that is the part most exposed to the force of the water. A similar thing happened here, but over millions of years, on a grand scale, and during a much wetter climate. (figure 2)

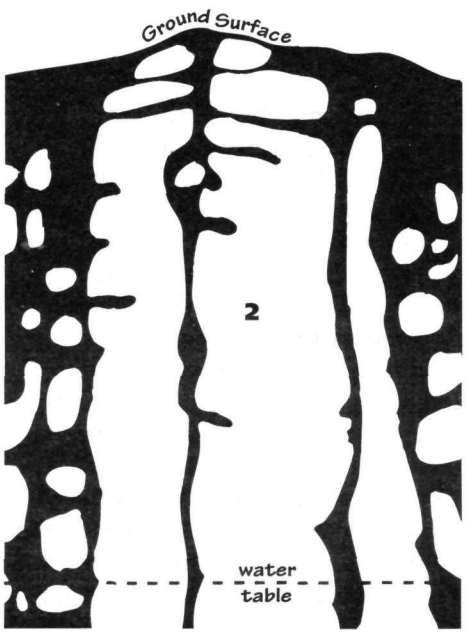
After the arrival of the arid climate of recent times, flash floods began washing away the protective ground surface. As they were exposed, the huge eroded boulders settled one on top of another, creating those impressive rock piles we see today. (figure 3)

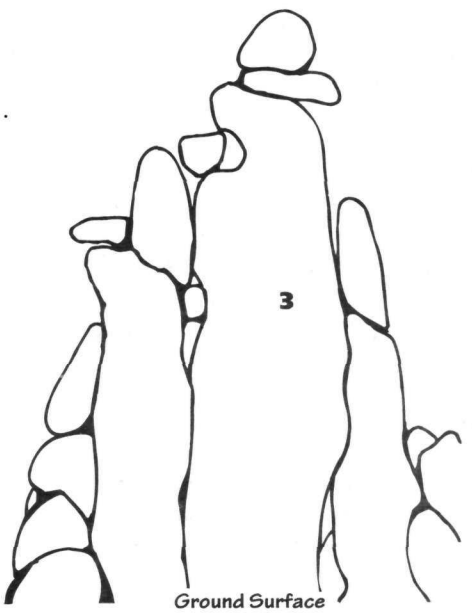
Visitors also wonder about the "broken terrace walls" laced throughout the boulders. These are naturally occurring formations called dikes. Younger than the surrounding monzogranite, dikes were formed when molten rock was pushed into existing joint fractures. Light-colored dikes formed as a mixture of quartz and potassium minerals cooled in these tight spaces. Suggesting the work of a stonemason, they broke into uniform blocks when they were exposed to the surface.

Of the dynamic processes that erode rock material, water, even in arid environments, is the most important. Wind action is also important, but less so than the action of water.

The processes operating in the arid conditions of the present are only partially responsible for the sculpturing of the rocks. The present landscape is essentially a collection of relic features inherited from earlier times of higher rainfall and lower temperatures.







"I Speak for the Trees" Dr. Seuss, The Lorax

Surrounded by twisted, spiky trees straight out of a Dr. Seuss book, you might begin to question your map. Where are we anyway? In wonder, the traveler pulls over for a snapshot of this prickly oddity; the naturalist reaches for a botanical guide to explain this vegetative spectacle; and the rock climber shouts "Yowch!" when poked by dagger-like spines on the way to the 5.10 climbing route.

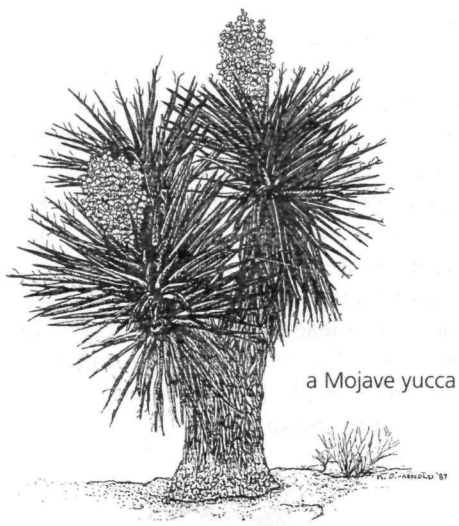
a Joshua tree

Known as the park namesake, the Joshua tree, *Yucca brevifolia,* is a giant member of the lily family. Like the California fan palm, *Washingtonia filifera,* the Joshua tree is a monocot, in the subgroup of flowering plants that also includes grasses and orchids. Don't confuse the Joshua tree with the Mojave yucca, *Yucca schidigera.* This close relative can be distinguished by its longer, wider leaves and fibrous threads curling along leaf margins. Both types of yuccas can be seen growing together in the park. The Joshua tree provides a good indicator that you are in the Mojave Desert, but you may also find it growing next to a saguaro cactus in the Sonoran Desert in western Arizona or mixed with pines in the San Bernardino Mountains.

Years ago the Joshua tree was recognized by American Indians for its useful properties: tough leaves were worked into baskets and sandals, and flower buds and raw or roasted seeds made a healthy addition to the diet. The local Cahuilla have long referred to the tree as "hunuvat chiy'a" or "humwichawa"; both names are used by a few elders fluent in the language.

By the mid-19th century, Mormon immigrants had made their way across the Colorado River. Legend has it that these pioneers named the tree after the biblical figure, Joshua, seeing the limbs of the tree as outstretched in supplication, guiding the travelers westward. Concurrent with Mormon settlers, ranchers and miners arrived in the high desert with high hopes of raising cattle and digging for gold. These homesteaders used the Joshua tree's limbs and trunks for fencing and corrals. Miners found a source of fuel for the steam engines used in processing ore.

Today we enjoy this yucca for its grotesque appearance, a surprising sight in the landscape of biological interest. The Joshua tree's life cycle begins with the rare germination of a seed, its survival dependent upon well-timed rains. Look for sprouts growing up from within the protective branches of a shrub. Young sprouts may grow several inches in the first five years, and then slow down, averaging one-half inch per year thereafter. The tallest Joshua tree in the park looms a whopping forty feet high, a grand presence in the Queen Valley forest; it is estimated to be about 300 years old! These "trees" do not have growth rings like you would find in an oak or pine. This makes aging difficult, but you can divide the height of a Joshua tree by the average annual growth of one-half inch to get a rough estimate.

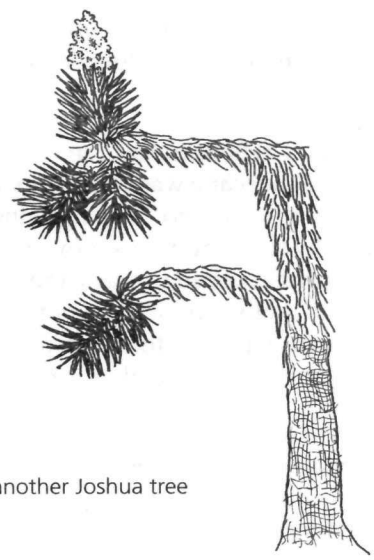


a Mojave yucca

Spring rains may bring clusters of white-green flowers on long stalks at branch tips. Like all desert blooms, Joshua trees depend on just the perfect conditions: well-timed rains, and for the Joshua tree, a crisp winter freeze. Researchers believe that below freezing temperatures may damage the growing end of a branch and stimulate flowering, followed by branching. You may notice some Joshua trees grow like straight stalks; these trees have never bloomed—which is why they are branchless! In addition to ideal weather, the pollination of flowers requires a visit from the yucca moth. The moth collects pollen while laying her eggs inside the flower ovary. As seeds develop and mature, the eggs hatch into larvae, which feed on the seeds. The tree relies on the moth for pollination and the moth relies on the tree for a few seeds for her young—a happy symbiosis. The Joshua tree is also capable of sprouting from roots and branches. Being able to reproduce vegetatively allows a much quicker recovery after damaging floods or fires, which may kill the main tree.

Many birds, mammals, reptiles, and insects depend on the Joshua tree for food and shelter. Keep your eyes open for the yellow and black flash of a Scott's oriole busy making a nest in a yucca's branches. At the base of rocks you may find a wood rat nest built with spiny yucca leaves for protection. As evening falls, the desert night lizard begins poking around under the log of a fallen Joshua tree in search of tasty insects.

You may be at ease with pine or hardwood, or find shade under the domesticated trees in your city park, but in the high desert, Joshua is our tree. It is an important part of the Mojave Desert ecosystem, providing habitat for numerous birds, mammals, insects, and lizards. Joshua tree forests tell a story of survival, resilience, and beauty borne through perseverance. They are the silhouette that reminds those of us who live here that we are home. Like the Lorax we speak for the trees, but often the trees speak to us.



another Joshua tree

By Vegetation Specialist Jane Rodgers

Desert Institute

The Desert Institute, the educational field program sponsored by Joshua Tree National Park Association, a not-for-profit organization, offers outdoor classes related to Joshua Tree National Park and the California deserts. Taught by experts in their field, classes vary in length from one to three days. Optional college credit is offered through University of California Riverside Extension for course titles followed by an asterisk (*). Course fees vary from $45 to $200.

Spring Class Schedule

Native American Basket Weaving	Feb 18, 19
Map & Compass Basic Skills	Feb 24, 25
Native American Basket Weaving Advanced	Feb 25, 26
Map & Compass Advanced Skills	Feb 26
Rocks and Minerals of Joshua Tree National Park*	Mar 3, 4, 5
Scats, Tracks, and Animal Facts	Mar 11
Explore Eagle Cliff Hills and Mine	Mar 12
Desert Night Sky	Mar 18
Wildflower Wanderings	Mar 19
Flora of Joshua Tree National Park*	Mar 25, 26
Drawing the Desert	Apr 1
Watercolor Painting in the Park	Apr 2
Photographing JT Up Close & Personal	Apr 7, 8
Basic Desert Survival	Apr 9
Butterflies of the Desert	Apr 21, 22
Hiking for Health and Wellness	Apr 23
Plein Air Poetry	Apr 23
Native Plant Gardening	Apr 30
Birds of Joshua Tree National Park*	May 5, 6, 7
Edible Plants of the Desert	May 13, 14

Contact us for a brochure or to sign up for a course: www.joshuatree.org / tel. 760-367-5535 / fax 760-367-5583 / e-mail desertinstitute@zippnet.net.

Publications to help you plan a visit to Joshua Tree National Park

The following publications have been selected for their value in planning your trip to Joshua Tree National Park. These items and many more may be ordered by mail, telephone, fax, or on the web at www.joshuatree.org.

Getting to Know Joshua Tree National Park

Road Guide to Joshua Tree National Park, Decker. Guides visitors on a driving tour through the land where the Mojave and Colorado Deserts meet. 48 pages PB $5.95

On Foot in Joshua Tree, Furbush. A comprehensive hiking guide featuring 90 park hikes, 40 photos and illustrations, and 26 maps and reference charts. 173 pages PB $14.95

Joshua Tree National Park A Visitor's Guide, Cates. A delightful, informative guide blending human and natural history. Enjoyable by desert rats and first-time visitors. 100 pages PB $6.95

Hiking California's Desert Parks, Cunningham. Presents 111 hikes and backcountry trips in Anza Borrego, Joshua Tree, Death Valley, and Mojave. 373 pages PB $16.95

Joshua Tree Desert Reflections, Trimble. Dazzling photos and lyrical narrative make this book both the perfect introduction to the park and a treasured memento. 40 pages PB $9.95

Joshua Tree Video. Excellent introduction to Joshua Tree National Park. 30 minutes VHS $13.95; PAL $15.95

Recreation Map of Joshua Tree, Harrison. Colorful map of Joshua Tree National Park highlighting points of interest, campgrounds, picnic areas, topographic features, and backcountry roads and trails. $8.95

Trails Illustrated Topographic Map of Joshua Tree National Park. Includes elevations, backcountry camping, hikes, routes, and safety. Waterproof and tearproof. $9.95

Joshua Tree, The Story Behind the Scenery, Vuncannon. Full of color photos and fascinating text, the perfect introduction to the park. 48 pages PB $9.95; $10.95 for French or German.

Joshua Tree National Park Geology. Trent and Hazlett. Explores the geology and evolution of the Joshua Tree landscape. Includes sections on plate tectonics, regional geology, and seismic activity. PB $9.95

50 Best Short Hikes, Krist. Covers Joshua Tree, Death Valley and Mojave. Hikes range from easy nature trails to more challenging routes suitable for a full day of hiking. 204 pages PB $12.95

On the Road in California

California Deserts, Schad. Takes you on a journey through the hottest, driest, lowest, and loveliest places in North America. 103 pages PB $14.95

National Audubon Society Field Guide to California, Alden, Health. A complete overview of California's natural history including an extensive sampling of the state's parks, preserves, beaches, forests, islands, and wildlife sanctuaries. 450 pages $19.95

The Living Desert, exploring national parks and monuments through natural sounds. Tape $10.95, CD $15.95.

The Complete Guide to America's National Parks, Fodor's. Up-to-date guide to all 384 National Park Service sites. 448 pages PB $19.00

California Road & Recreation Atlas. Detailed maps include landscape, recreation guides, GPS grids, and freeway exit numbers. 143 pages PB $24.95

Life in the Desert

Desert Survival Tips, Tricks, & Skills, Nester. Explains how to deal with emergencies that might arise in a desert environment. Filled with examples, narratives, and illustrations to aid understanding. 70 pages PB $10.95

How Indians Used Desert Plants, Cornett. An informative account of the ways early natives used a variety of desert plants for food, tools, building materials, and as an integral part of their daily lives. 62 pages PB $9.95

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Desert Solitaire, Abbey. The author's recollection of summers spent as a ranger in the canyon and rim country of southern Utah, including observations of the natural world. 269 pages PB $14.00

The Joshua Tree, Cornett. Up-to-date information about this symbol of the Mojave Desert and namesake of our national park. 32 pages PB $6.95

Wildflowers of Joshua Tree National Park. Fifty-eight color photos of blooming wildflowers, shrubs, and cacti taken by park staff provide a handy reference for visitors. $2.50

The Lizard-Watching Guide, Sanborn. More than a typical field guide, Sanborn details seventeen common lizards found in the Mojave and Colorado deserts. 36 pages PB $8.95

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Mojave Desert Wildflowers, Stewart. Presents a condensed view of the nearly 2,000 species of plants known to occur throughout the Mojave Desert region. 210 pages PB $14.95

Poisonous Dwellers of the Desert, Dodge. This classic provides accurate, useful information and debunks superstitions about poisonous desert critters. 40 pages PB $6.95

Education to enhance your visit to Joshua Tree National Park

The Desert Institute at Joshua Tree National Park, the education program of the Joshua Tree National Park Association, sponsors one, two, and three day field classes on weekends from September to May. Each class examines a natural or cultural feature of the Mojave Desert and is geared to teachers, volunteer interpreters, park visitors, and others interested in learning about the park and the Mojave Desert. College credit is available through University of California Riverside Extension.

Members of the Joshua Tree National Park Association are automatically enrolled in Partners in Nature Education (PINE), which qualifies them to receive a $10 discount on each Desert Institute class, as well as discounts on University of California Riverside Extension outdoor study courses. For information on becoming a Joshua Tree National Park Association member, call 760-367-5535.

A catalogue of Desert Institute classes is available at park visitor centers, or you may call 760-367-5535 and request one by mail. An on-line class catalogue is available on our website: www.joshuatree.org.

Ordering Information

Telephone orders are encouraged to ensure that you are ordering the publications best suited to your needs or order from our website at www.joshuatree.org.

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Elders of the Desert

As spring approaches and annual plants start to rise—along with the temperature—desert tortoises, *Gopherus agassizii,* become restless within their burrows. Soon they will emerge to feed, bask in the sun, and mate.

Tortoise populations have been declining for decades because of collecting, vandalism, loss of habitat, and disease. In 1990 the U.S. Fish and Wildlife Service listed the species as threatened. To better understand this species, land managers have been conducting intensive research for several years now. Joshua Tree National Park plays a key role in such research (please see *Volunteer Tortoise Researchers Needed* on this page). Suitable habitat here is extensive and, unlike other areas, has remained relatively pristine due to the protection given to it and the limited impact by man. Knowledge of conditions within undisturbed tortoise populations is helpful in determining the effect of disturbances elsewhere.

Tortoises are terrestrial reptiles—unlike turtles who spend most of their time around water. Occupying a variety of habitats in the park, tortoises live in both Mojave and Colorado desert ecosystems and are generally found below 4,000 feet.

Like many desert animals, tortoises' food preferences depend on locality and availability of food items. They feed on herbaceous perennial and annual wildflowers, such as lotus, spurges, blazing stars, lupines, forget-me-nots, desert dandelions, gilias, phacelias, and coreopsis. Several species of grasses are also eaten, as well as the occasional fresh cactus pad or bud.

Water requirements for the tortoise are met largely by the moisture content of their food. When it rains tortoises will drink free water where it collects in pools near rocks or in depressions. An important survival feature that tortoises use to withstand dry periods is to store water in their bladders where it can be reabsorbed.

Tortoises spend most of their lives (about 95 percent!) in burrows, which vary in length from two to 15 feet. During the warmer months they may occupy temporary burrows or pallets which barely cover their shells. But they use their larger burrows for escape from the elements, hibernation in winter, and a refuge from predators such as coyotes, ravens, kit foxes, golden eagles, and greater roadrunners.

Females lay one or more clutches of one to 12 eggs from mid-April to mid-July. The eggs, which are the shape and size of ping-pong balls, are concealed within the burrow by the female who will push with her hind legs to cover them with dirt. Hatching takes place in 70 to 120 days. If you are in the park between mid-July and mid-October keep an eye out for the sand-dollar sized babies.

If you are lucky enough to observe a tortoise during your visit to the park, please fill out a wildlife observation card (please see *Wildlife Watch* on this page) and remember that tortoises are a threatened species and are protected by federal law. Please do not touch the animal or disturb it in any way. You should remain some distance away and observe it quietly. You do not want to frighten the tortoise since it may empty its bladder as a defense mechanism. This results in a critical loss of stored water for the animal, which then may not survive a dry period.

An exception to the "don't touch" rule occurs when you see one crossing a road and in danger of being run over by oncoming traffic. In that case approach the tortoise slowly and note which direction it is heading. Pick it up carefully, keeping it level, and take it 150 feet or so off the road in the direction it was going.

Tortoises are having a hard time in southern California. That's why they are "threatened." Joshua Tree National Park is a sanctuary for tortoises, where they are protected from many of the threats they face in other places. Enjoy them on your visit here. Living more than a hundred years, the tortoise you see today will hopefully greet your grandchildren's children in the year 2106.

by Biological Technicians Chris Collins and Kristen Lalumierre

Desert tortoise leaving its burrow.

Desert Tortoise entering its burrow.

Desert Tortoise eyeing a wildflower.

Wildlife Watch

It is always a treat to observe a wild animal living free in the park. Have you seen any wild animals during your visit? If so, please tell us all about it.

Joshua Tree has a record of wildlife observations made by park visitors and staff that dates back nearly 50 years. Park managers use the information collected to better protect wildlife and to guide them when planning for the future.

So, if you see an animal that you can positively identify, please fill out a *Wildlife Observation Card.* Cards are available at entrance stations, visitor centers, and from park rangers.

The information that you provide will be entered into a computer database so that it can be mapped and analyzed to increase our knowledge of the animals living in the park.

If you take a picture of the animal that you observe, please send a copy to help with identification and to add to our photo collection. Digital images may be e-mailed to jotr_info@nps.gov.

Volunteer Tortoise Researchers Needed

As part of a long-term study to determine the population density and health of the desert tortoise, *Gopherus agassizii,* in the Pinto Basin, park biologists will be conducting weekly monitoring surveys from March to May of this year.

Survey days are Fridays and Saturdays. Staff meet at 6:00 a.m. and work until 3:30 in the afternoon, including travel time. If you would like to join us for one or more days of field work as a volunteer researcher, please call 760-367-5561 or e-mail jotr_info@nps.gov for further information.